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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/558,813	11/15/2006	Marlene Moerth	083042-000000US	6928

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EXAMINER

QIN, JIANCHUN

ART UNIT	PAPER NUMBER
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2837

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/558,813	Applicant(s) MOERTH, MARLENE	
	Examiner JIANCHUN QIN	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-48 and 50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-48 and 50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendments made to the specification and abstract filed on 09/05/2008 have been accepted and entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 41, 43, 44 and 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landell (U. S. Pat. No. 6124538) in view of Voigt (DE 29705540 U1).

Regarding claim 41, Landell discloses accessory or component or actuating parts for or of musical instruments comprising said parts being made at least partially from titanium or a titanium alloy (Abstract), the titanium and the titanium alloy, respectively, being in a cast, forged or sintered form (cols. 3-4, lines 66-69; col. 5, lines 15-32 and 48-52; col. 6, lines 48-57).

Landell does not mention expressly: the parts being coated with at least one hard layer by depositing or applying the hard layer to the parts, in the course of a physical application process; wherein said hard layer made of at least one of tungsten carbide

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carbon, tungsten carbide, chromium carbide and chromium nitride, and/or a hard layer made of titanium nitride.

Voigt discloses a musical instrument having accessory or component or actuating parts for or of the instrument (Abstract), wherein said parts are coated with a hard layer by depositing or applying the hard layer to the parts in the course of a physical application process (inherent to Voigt's coating process for coating the parts with titanium nitride of thickness of 3 micrometres, further supported by the statement "The use of a coated valve rotor, which is lighter than an equivalent rotor made entirely from titanium, ..."); wherein said hard layer made of titanium nitride (Abstract)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Voigt in the invention of Landell in order to provide a highly durable and abrasion-resistant composite diamond-like carbon coating which is ideally suitable for coating running surfaces of musical instruments (Voigt, Abstract).

Regarding claims 43 and 44, Landell discloses: wherein the parts are subjected to a thermal treatment or are hardened thermally (cols. 5-6, lines 15-57); wherein said parts are prepared by machining (cols. 5-6, lines 15-57).

Regarding claims 46 and 47, Landell discloses: wherein the parts comprise at least one of: a fine tuner for string instruments, in particular the screw connection part and/or knurled nut and/or lever and/or knurled screw and/or microscrew thereof, a string ball, a tailpiece fastener and/or a fixing part for a tailpiece fastener, a wolf eliminator, in particular the screw sleeves thereof, a peg, preferably a peg for string instruments, in

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particular a peg shaft, a tuning peg, in particular for keyboard instruments, harp, zither, dulcimer and raffle, a mouthpiece for brass instruments, a bridge pin, in particular for keyboard instruments, a string for string instruments, a fret, in particular for plucked instruments, a sound piece for brass instruments and a bell mouth, respectively, for hooters, signal-horns or horns, a chin holder screw, in particular for violin and viola, a plectrum, in particular for plucked instruments, a mechanism for plucked instruments, in particular contrabasses, a trombone slide, a valve for brass instruments, a lamina, in particular for vibraphone or metallophone, a tongue for harmonicas, in particular accordions and mouth organs, and for musical clocks and automatic pianos, respectively, a sheet or tone sheet, respectively, preferably for woodwind instruments or saxophone, a bridge support, in particular for string instruments, a mute for string instruments, a bow winding for a string bow, an organ pipe, a face for a string bow, a tailpiece or tailpiece sleeve, respectively, a thumb ring, a bottleneck, in particular for plucked instruments, a frog and/or a button for a string bow as well as a frog, a ring, a gusset or a button ring, a bell, a bassoon tube, a tuning fork, a tuning pipe, an endpin for string instruments, a button for string instruments, a bridge for plucked instruments, a saddle for plucked instruments, a tailpiece for string instruments, and valves for wind instruments (col. 6, lines 48-57); wherein the parts are entirely made from titanium or titanium alloy (Abstract; col. 6, lines 48-57).

Regarding claim 48, Landell does not mention expressly: wherein said parts being made at least partially from a titanium alloy grade 5, wherein the grade 5 titanium alloy is TiA16V4.

In view of the teaching of Landell, however, one having ordinary skill in the art at the time the invention was made would be able to select a well known material, such as a titanium alloy grade 5, preferably TiAl6V4, to form at least partially said parts for and of musical instruments, in order to make the parts lighter, more durable and resistant to marring than other materials (Landell, Abstract), since it has been held to be within the general skill of worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

4. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landell in view of Voigt, as applied to claim 41 above, and further in view of Gartner et al. (U. S. Pat. No. 4659629).

Regarding claim 42, Landell in view of Voigt teach the invention including the subject matter discussed above. Landell further discloses: wherein, for coloring, the surfaces of the parts are electroplated and/or coated with gold or anodized, respectively (col. 4, lines 20-24; col. 5, lines 33-37 and 52-56; col. 6, lines 58-65).

Landell in view of Voigt do not mention expressly: wherein, for coloring, the surfaces of the parts are electroplated and/or coated with platinum, or rhodium, respectively.

Gartner et al. teach: electroplating and/or coating surfaces of magnesium alloys containing aluminum with platinum, gold or rhodium, respectively (col. 2, lines 17-42).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Gartner et al. in the combination of Landell and Voigt in order to provide enriched surface coating to the surface to form a

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highly effective protective outer layer on the surfaces (Gartner et al., Abstract), and also to make it easier to color anodize the surfaces (Landell, cols. 2-3, lines 61-3).

5. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landell in view of Voigt, as applied to claim 41 above, and further in view of Murata et al. (U. S. Pat. No. 4507184).

Regarding claim 45, Landell in view of Voigt teach the invention including the subject matter discussed above except: the titanium and the titanium alloy, respectively, have a density of about 4.42 g/cm² and a tensile strength of at least 820 N/mm².

Murata et al. teach articles made of titanium and titanium alloy, wherein the titanium and the titanium alloy have a high ratio of tensile strength to density.

In view of the teachings of Landell, Voigt and Murata et al., it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the titanium and titanium alloy having an optimum value of the ratio of tensile strength to density such that the musical instrument made of that titanium and/or titanium alloy are of outstandingly small specific gravity, high corrosion resistance, and extremely fine ruggedness on the surface (Murata et al., col. 1, lines 14-29), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

6. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landell in view of Voigt, as applied to claim 41 above, and further in view of Johansson et al. (U. S. Pat. No. 5320686).

Regarding claim 50, Landell in view of Voigt teach the invention including the subject matter discussed above except: wherein the physical application process comprises a Physical Vapor Deposition (PVD) process.

Johansson et al. teach coating surfaces with at least one layer, which preferably are deposited or applied, respectively, in the course of a physical application process, in particular a PVD process (cols. 6-7, lines 58-2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Johansson et al. in the combination of Landell and Voigt in order to provide a highly effective and robust physical process to coat a surface (Johansson et al., col. 2, lines 6-43).

Response to Arguments

7. Applicant's arguments received 09/05/08 with respect to claims 41-48 and 50 have been considered but are moot in view of the new ground(s) of rejection.

Claims 41-48 and 50 are rejected as new prior art reference (DE 29705540 U1 to Voigt) has been found to teach, in combination with other cited prior art references, the claimed invention recited in these claims. Detailed response is given in sections 3-8 as set forth above in this Office action.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jianchun Qin whose telephone number is (571) 272-

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5981. The examiner can normally be reached on 8am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on (571) 272-2227.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. Q./

Examiner, Art Unit 2837

Walter Benson/

Supervisory Patent Examiner, Art Unit 2837